

# WHAT MACHINE LEARNING LIKES: LOW VOLATILITY AND QUALITY EXEMPLIFYING PRICING POWER

June 2022

## Executive Summary

We are very excited to bring to you our inaugural edition of **What Machine Learning Likes**. There has been an ever growing interest in Machine Learning (ML) over recent times and with this publication our aim is to highlight market trends within ML and assess their impact on our portfolios. The next edition will be published in July and then on a quarterly basis.

ML algorithms digest a large amount of data to identify patterns and build predictability that constantly evolves as it adapts to continuous feedback and market dynamics. At Unigestion, we have worked on developing our ML techniques over the last few years and have uncovered how ML-based stock selection models can successfully enhance the performance of risk-managed portfolios. More recently, we have further enhanced our model and applied it to our active factor investing strategies – training the machine to identify where it has learnt enough to discover ‘alpha’. Specifically, we have implemented ML-based forecasts into our Multi-Factor Equity strategy to take into account the dynamic nature of the ML methodology.

## Market Review

Global equities slumped in April amid growth fears, supply chain woes and some disappointing earnings results from the mega tech giants. In the US, the S&P 500 index declined 8.8%, its largest monthly retreat since March 2020. The technology-heavy Nasdaq Composite index fell further into bear market territory, a 13.2% fall in April being its worst monthly decline since October 2008. In less tech-dominated Europe, indices fared slightly better, with the MSCI Europe index dropping 5.3% over the month. Emerging market equities also decreased in April, with the MSCI Emerging Market index declining by 5.6%. In China, factory activity contracted at a steeper pace in April, as widespread Covid-19 lockdowns curbed production and disrupted supply chains. The concerns about the steep cost of China’s zero-tolerance policy continued to weigh on the stock market, with the MSCI China index dipping by 4.1% despite a sharp rally at the end of the month.

Looking at the traditional risk premium factors, with the big swings in the market, we saw Lower Volatility stocks outperform as investors evaluated the macro environment and market dynamics. While the Value factor delivered a positive performance, Growth lagged.

## Navigating the Factor Zoo: Quality Led the Way in Developed Markets

Our ML algorithm gathers ~150 indicators across the spectrum of fundamental, technical, sentiment and alternative data sets to uncover the non-linear relationships between those indicators and the expected returns.

In developed markets, the correlation of our ML signal’s scores to Quality, Momentum and Low Vol were all positive in April and above their long-term average, as Figure 1 demonstrates. Despite Quality lacking its lucrative performance in recent quarters, we believe the rationale behind the ML signal’s fondness for it comes from two fronts.

Read more of our latest investment thinking online: [www.unigestion.com/insights](http://www.unigestion.com/insights)



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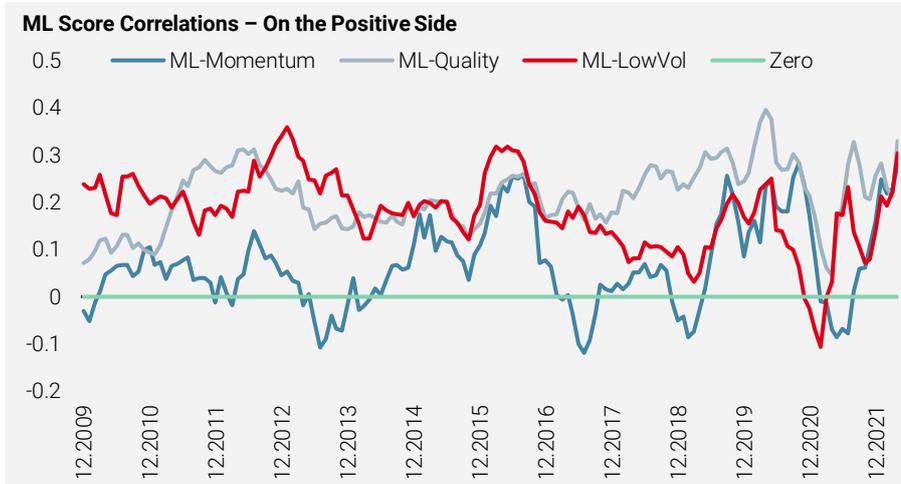
## Key Points

1. With the big swings in the market in April, Low Vol stocks outperformed, while the Value factor was also positive.
2. In developed markets, the correlation of our ML signal’s scores to Quality, Momentum and Low Vol were all positive and above their long-term average.
3. In emerging markets, ML signals exhibited a positive correlation to Low Vol and Value after a dip from 2020 to early 2021.



Firstly, companies with higher quality features tend to fare better during times when economic growth is slowing down, and, as our proprietary macro Nowcasters are indicating, this is exactly what we are experiencing now. Secondly, given the current inflationary regime is expected to be with us for a while, companies with higher profitability are better placed to digest and absorb these cost increases than lower quality (or non-profitable) companies.

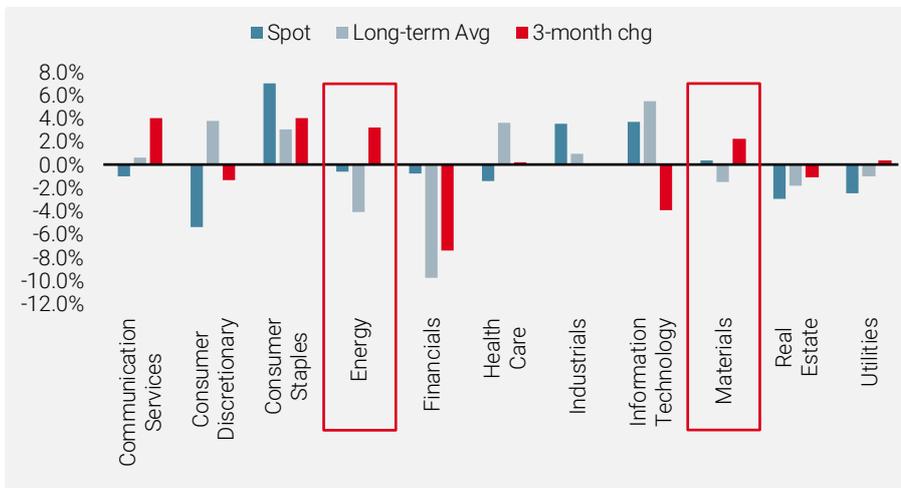
**Figure 1: ML Score Correlations in Developed Markets**



Source: Unigestion, Compustats, CiQ. As at 30 April 2022.

The conflict between Russia and Ukraine has contributed to a significant amount of market uncertainty and its consequences are already having a severe impact on various industries, ranging from energy to food, and from semiconductors to cars. The geopolitical volatility had a clear influence on the ML model, where it not only favours the Low Vol factor but has also started to like Energy and Materials stocks, areas of the market that are generally associated with strong momentum. As illustrated in Figure 2, while we are still slightly underweight Energy and marginally overweight Materials, by -0.6% and 0.4% respectively, the recent market dynamics have prompted our ML model portfolio to increase allocation in both sectors by 3.2% and 2.2% respectively over the last three months.

**Figure 2: ML Model Portfolio's Sector Allocation in Developed Markets**



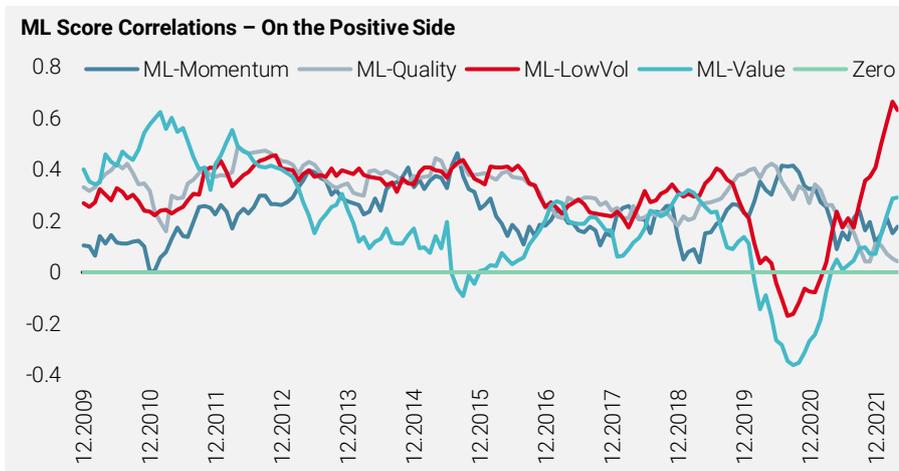
Source: Unigestion, Compustats, CiQ. As at 30 April 2022.



## ML Likes Low Vol at a Historical High Level in Emerging Markets

In emerging markets, ML signals exhibited a positive correlation to Low Vol and Value after a dip from 2020 to early 2021. More recently, the positive trend between the ML signal and Low Vol reached an all-time high, at above 0.6 in April. This indicates the ML alpha signal is strongly in favour of companies exhibiting lower volatility characteristics.

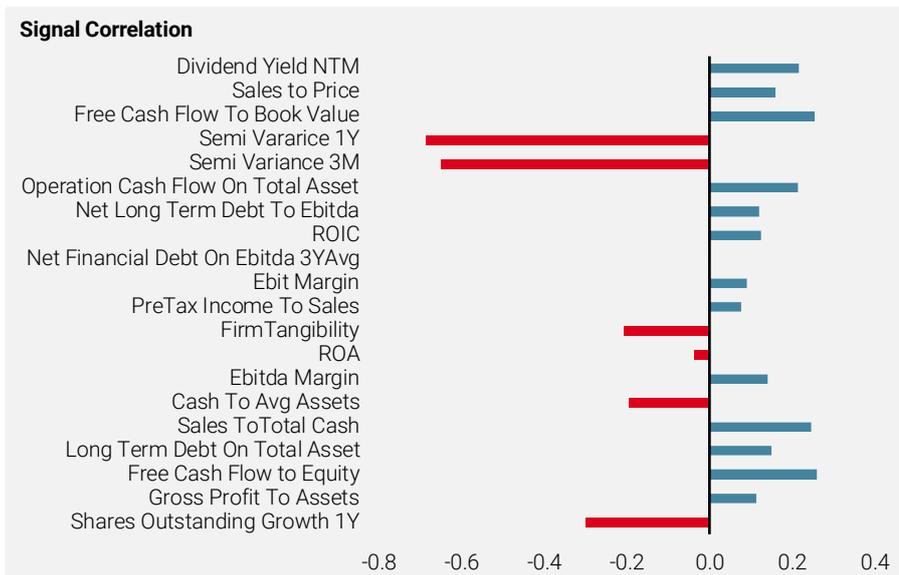
Figure 3: ML Score Correlations in Emerging Markets



Source: Unigestion, Compustats, CiQ. As at 30 April 2022.

When navigating through the factor zoo, we found that Quality-anchored metrics dominated the top 20 most important features that derive the ML signal forecast scores. As shown in Figure 4a, both profitability-related metrics, such as **Operating Cash Flow on Total Assets**, **EBITDA Margin**, **Free Cash Flow to Equity**, and safety-related features of **3y Average Net Debt to EBITDA** exhibited a positive correlation with the ML signal. The highly volatile market environment ensured a spot routinely occupied by the risk features. The strong negative correlation between high-risk features and the ML signal further implied the preference for low volatility characteristics. It is also interesting to see that the current most important features that are being favoured by ML models have consistently appeared at the top of the leader boards over the past few months, as shown in Figure 4b.

Figure 4a: Top 20 Important Features in Emerging Markets



Source: Unigestion, Compustats, CiQ. As at 30 April 2022.

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**Figure 4b: Appearance in Top 20 Important Features over the past Six Months**

ML Signal	Factor Group	# Appearances in the Top 20 Most Important Features over the past 6 Months
Operation Cash Flow On Total Asset	Quality	6
Net Financial Debt On EBITDA 3Y Avg	Quality	6
Firm Tangibility	Quality	6
EBIT Margin	Quality	5
Long Term Debt On Total Asset	Quality	6
Net Long Term Debt To EBITDA	Quality	6
ROA	Quality	6
Pre Tax Income To Sales	Quality	6
Cash To Avg Assets	Quality	6
ROIC	Quality	5
Gross Profit To Assets	Quality	6
Sales To Total Cash	Quality	6
EBITDA Margin	Quality	5
Semi Variance 1Y	Risk	6
Semi Variance 3M	Risk	5

Source: Unigestion, Compustats, CiQ. As at 30 April 2022.



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Document issued June 2022.